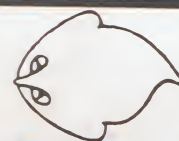
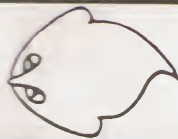


Williams[®]

16P-3003-103
Game No. 3003
October, 1981



Instruction Manual (Upright)



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INSTALLATION

1. Move the cabinet close to desired location and unlock the upper rear door panel. Remove the door and set it aside.
2. Open two latches and swing open the lower rear door.
3. Check that the fuses on the power supply (mounted on the cabinet floor) are securely installed in their fuse clips. (Fuse F4 may be installed but no connections are made to the associated -5VDC output.) Also check that the 3A line fuse on the power panel is secure in its clips.
4. Unlock the coin door. Reach through the coin door opening and open two latches to release the control panel. Unhook the control panel safety chain and lower the control panel.
5. Check that the following connectors are firmly seated and that no wires are broken or termination pins loose in the connector.
 - a. Coin door connector.
 - b. Control panel connector.
 - c. Monitor control 6-pin connector and monitor power connector.
 - d. Transformer connector at the power panel.
 - e. Three connectors on the Power Supply.
 - f. CPU Board connector.
6. Check that the twelve socketed IC's on the CPU Board are firmly seated in their sockets.
7. To check or change game adjustments, locate the CPU Board mounted on the right side of the cabinet as viewed through the coin door and refer to Game Adjustment procedures which follow.
8. Extend the line cord from the game and insert it in the slot in the lower door frame.
9. Swing the lower door closed and latch it.
10. Install and lock the upper rear door.
11. Reconnect the control panel safety chain and latch the control panel in position.

POWER TURN-ON

This game **MUST BE PLUGGED INTO A PROPERLY GROUNDED OUTLET** to PREVENT SHOCK HAZARD and to ensure PROPER GAME OPERATION. DO NOT use a "cheater" plug to defeat the ground pin on the line cord, and DO NOT cut off the ground pin. The line voltage must agree with that specified on the back of the cabinet or serious damage to the machine could occur. For low-line voltage applications (105VAC), refer to the power wiring diagram.

1. Plug the game in and turn it ON. The game should sequence through a self test of certain IC's on the CPU Board, produce a color pattern, produce a crosshatch pattern, and then come up in the Attract Mode.
2. If the power-up self-test detects a failure, note the failure indication and turn the game OFF and ON. If the failure indication is repeated, replace the faulty IC.
3. Insert coins, press 1- or 2-player start, and play a game to test switches, sound, and program functions. Refer to Tests and Troubleshooting.

GAME OPERATION

Direct paint brush using joystick to paint all paths of the maze. Avoid fish who attempt to spoil your paint brush. When pushing the paint roller, paint over the fish and cause a brief return to their aquarium. When selected by an adjust switch setting, a warp hole appears randomly in the maze; escape from the fish by entering the warp hole and return to the start position.

In the first pattern, a small cat may come out and make tracks on the maze. Paint over the cat and over all its tracks. With the entire maze painted, rain falls and washes off the paint for the succeeding pattern.

In subsequent patterns, a mouse, bird, runaway tire, large cat, and an invisible man may come out to make tracks on the maze.

Scoring

Painting maze - 10 points for unit area.

Painting over tracks - 10 points each footprint.

Rolling over fish - 50, 100, 200, . . . 3200, 6400, 9000 in first pattern; starts at 100 in second, 200 in third, etc.

Painting over cat, mouse, etc. - 1,000.

Completing each pattern - 1,000 times pattern number.

Bonus paint brush at 10,000 points.

GAME ADJUSTMENTS

Game adjustments are made using an eight-position DIP switch located in the upper right corner of the CPU board. (Refer to Table 1.) Switches 1 and 2 control game pricing. Switches 3 and 4 select the number of turns given each player. Switch 5 adjusts game play difficulty. Switch 6 enables and disables the warp hole. Switch 7 defines the game that the CPU board is used with (upright or table). Switch 8 is used to freeze the pattern present on the CRT for monitor adjustments.

General

Turn the power switch OFF. Use a pen or small screwdriver to make switch settings. ON is toward the rear of the cabinet; OFF toward the front.

Game Pricing

Switches 1 and 2 determine game pricing. With switch 1 OFF and switch 2 ON, one game is awarded for one coin (factory recommended setting). With both switches OFF, one game is awarded for two coins. With switch 1 ON and switch 2 OFF, two games are awarded for one coin. With both switches ON, **free play** is in effect.

Number of Player Turns

Switches 3 and 4 determine the number of player turns. The minimum number of turns is three, selected with both switches ON (factory recommended setting). With switch 3 OFF and switch 4 ON, four turns are selected. With switch 3 ON and switch 4 OFF, five turns are selected. With both switches OFF, six turns are selected.

Play Difficulty

Switch five is used to adjust game difficulty. With switch five OFF, the first pattern is easy. If it is ON (factory recommended setting) the first pattern is made difficult.

Warp Hole

Switch 6 enables and disables the random warp hole. With it OFF (factory recommended setting), the warp hole is disabled. Set switch 6 to ON to enable it.

Upright/Table Games

Switch 7 defines the game that the CPU board is used with. For use in an upright version of the game, switch 7 **must be ON**. For use in a table version of the game, switch 7 **must be OFF**.

Monitor Adjustments

Switch 8 is used to freeze the CRT pattern for ease of monitor adjustments such as color convergence, focus, etc. The CRT display is frozen when switch eight is ON. Switch 8 **must be turned OFF** for normal play of the game.

Table 1. Switch Adjustments

ADJUSTMENT	SWITCH NUMBER							
	1	2	3	4	5	6	7	**8
*RECOMMENDED	OFF	ON	ON	ON	ON	OFF	ON	OFF
1 PLAY/2 COINS	OFF	OFF						
2 PLAYS/1 COIN	ON	OFF						
*1 PLAY/1 COIN	OFF	ON						
FREE PLAY	ON	ON						
6 BRUSHES			OFF	OFF				
5 BRUSHES			ON	OFF				
4 BRUSHES			OFF	ON				
*3 BRUSHES			ON	ON				
FIRST PATTERN EASY					OFF			
*FIRST PATTERN DIFFICULT					ON			
*WARP HOLE DISABLED						OFF		
WARP HOLE ENABLED						ON		
TABLE GAME							OFF	
UPRIGHT							ON	

** SET SWITCH 8 TO ON TO FREEZE PATTERN FOR MONITOR ADJUSTMENTS.

TESTS AND TROUBLESHOOTING

Perform the tests indicated in Table 2 **in the sequence presented**. Fault isolation decisions presented depend on all previous checks and repairs being made.

NOTE: PERFORM ALL CHECKS IN SEQUENCE AS LISTED IN TABLE

Table 2. Initial Tests

ACTION	PROPER RESULTS	FAULTY SYMPTOM/ ADDITIONAL ACTION	REMEDY
Power Up	Game over mode, no credits posted	<ol style="list-style-type: none"> 1. Black screen 2. Loss of video sync 3. One credit posted; insert coins 4. 99 credits posted 	<ol style="list-style-type: none"> 1. Check continuity of monitor as power through 5P1; replace video and/or color ROMs 4A (3003-3) and 7F (3003-4). 2. Check continuity of violet sync lead from IP1-F to 5P2. Check jumpers on board from IP1-V to S1-1 and from S1-2 to IP1-F. With pulsing at S1-1 and no pulsing at S1-2, replace S1. 3. a. If no additional credits posted check for stuck coin switch; short to ground of WHT-BLU lead from switch thru 8P1/8J1-8,-9,-10 to IP1-13; C8 shorted, RA8-3 pullup open; low at 8H-12, replace 8H. b. If additional credits are posted, check for C10 shorted, RA8-5 pullup open, low at 8H-14; replace 8H. 4. Check game adjust switches; open RA10-2 or 3 pullup; low at 8F-12 and -14, replace 8F.
Insert Coins	Credits Posted	<ol style="list-style-type: none"> 1. None posted Jumper ground to coin switch WHT-BLU lead 2. Posted incorrectly 3. Game starts by itself with credit(s) posted 	<ol style="list-style-type: none"> 1. a. If credits posted check continuity of BLK-ORN lead from 4P3-6 thru 8P1/8J1-4 to coin switch. b. If no credits posted check continuity of WHT-BLU lead from switch thru 8P1/8J1-8,-9,-10 to IP1-13. Check R36 and RA8-3 pullup; check for pulsing at 8H Pin 15. If pulsing replace 8H, if not pulsing replace 7J. 2. Check game adjust switches; replace 8F. 3. Check for stuck start switches; short to ground of ORN-BLU (ORN-GRN) lead; C17 (C16) shorted; RA9-4 (RA9-3) pullup at 8H-6 (-10) open; low at 8H-6 (-10), replace 8H.
Press 1-Player (2-Player) Start	Game starts and music played	<ol style="list-style-type: none"> 1. Does not start, jumper ground to player start ORN-BLU (ORN-GRN) lead 2. Starts, no music played. Set volume control on CPU maximum clockwise and listen for low-level noise in speaker. 	<ol style="list-style-type: none"> 1. a. Game starts, check continuity of BLK-ORN lead from IP1-3 thru 7P1/7J1-1 to start switches. b. Game does not start. Check continuity of ORN-BLU (ORN-GRN) lead from start switches thru 7P1-2 (-3) to IP1-P (N). Check R45 (R44) and RA9-4 (RA9-3) pullup. Check for pulsing at 8H pin 1. If pulsing, replace 8H; if not replace 7J. 2. a. No noise. Check for +12VDC at IP1-5. Check volume control; check connections of RED-BLK and BLK-RED leads from IP1-D and -4 thru 6P2-1 and -3 to speaker. Check speaker continuity. Replace AMP 1. b. Noise produced. Replace Sound Waveform ROM 1M, and/or Sound Clock ROM 3M.
Operate joystick	Paint brush moves and changes directions properly	<ol style="list-style-type: none"> 1. Paint brush moves without operating joystick 2. Paint brush does not respond to joystick for one direction 3. Paint brush does not respond for any direction 4. Player 1 operates properly but Player 2 pattern is upside down and brush does not respond 5. Pattern upside down for Player 1 6. Paint brush moves but there is no maze definition 7. Maze defined but character definition missing 	<ol style="list-style-type: none"> 1. Make checks shown in Table 3. 2. Make checks shown in Table 3. 3. Replace IC 8F. 4. Check game adjust switches; check RA10-6 pullup. Replace 8E. 5. Check for low at 8K-6; if high replace 8K, if low replace 7H. 6. Replace ROM A (location 5E) 7. Replace ROM B (location 5F)

Table 3. False Switch Symptoms

DIRECTION	FALSE MOVEMENT	NO MOVEMENT
UP	Check for stuck switch contacts; short to ground of GRN-YEL lead; open pullup (RA8-8), C13 shorted; 8E-10 low, replace 8E.	Check ground (BLK-ORN lead) continuity to switch; check continuity of GRN-YEL lead from switch thru 7P1-9 to 1P1-11; R41 open; RA8-8 pullup; Replace 8E.
DOWN	Check for stuck switch contacts; short to ground of GRN-BRN lead; open pullup (RA8-9), C13 shorted; 8E-14 low, replace 8E.	Check ground (BLK-ORN lead) continuity to switch; check continuity of GRN-BRN lead from switch thru 7P1-7 to 1P1-12; R42 open; RA8-9 pullup; Replace 8E.
LEFT	Check for stuck switch contacts; short to ground of GRN-RED lead; open pullup (RA8-7), C12 shorted; 8E-4 low, replace 8E.	Check ground (BLK-ORN lead) continuity to switch; check continuity of GRN-RED lead from switch thru 7P1-11 to 1P1-S; R40 open; RA8-7 pullup; Replace 8E.
RIGHT	Check for stuck switch contacts; short to ground of GRN-BLK lead; open pullup (RA8-6), C11 shorted; 8E-6 low, replace 8E.	Check ground (BLK-ORN lead) continuity to switch; check continuity of GRN-BLK lead from switch thru 7P1-5 to 1P1-R; R39 open; RA8-6 pullup; Replace 8E.

